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MS-DOS

5.0

Getting Started

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Microsoft® MS-DOS®

Getting Started

for the MS-DOS Operating System

VERSION 5.0

Microsoft Corporation

Contents

Chapter 1
Before You Begin

Microsoft® MS-DOS® is the most widely used operating system for personal computers. The new features in version 5.0 make your computer an even more valuable tool.

Before you install MS-DOS version 5.0, read this chapter. It includes a list showing you how to find information in this guide and in the *Microsoft MS-DOS User's Guide and Reference*. You'll also find document and keyboard conventions.

Finding the Information You Need

You received two guides with MS-DOS version 5.0: *Microsoft MS-DOS Getting Started* and *Microsoft MS-DOS User's Guide and Reference*. It's best to start with this guide, *Getting Started*.

As you work with MS-DOS version 5.0, the following list can help you quickly locate the information you need.

To learn about	Read
Batch programs	*User's Guide and Reference*, Chapter 10
Command reference	*User's Guide and Reference*, Chapter 14
Computer basics	*User's Guide and Reference*, Chapter 1
Customization of your system	*User's Guide and Reference*, Chapter 11
Device drivers	*User's Guide and Reference*, Chapter 15
Doskey program	*User's Guide and Reference*, Chapter 7
Hard-disk partitions	*User's Guide and Reference*, Chapter 6
Installation of MS-DOS	*Getting Started*, Chapter 2

To learn about	Read
International support	*User's Guide and Reference*, Chapter 13 and Appendix
Memory optimization	*User's Guide and Reference*, Chapter 12
MS-DOS Editor	*User's Guide and Reference*, Chapter 9
MS-DOS Shell	*User's Guide and Reference*, Chapters 3 and 8
Online Help	*User's Guide and Reference*, Chapters 2 and 3
Troubleshooting	*Getting Started*, Chapter 3
Upper memory area	*User's Guide and Reference*, Chapter 12

Conventions

This guide uses particular document and keyboard conventions to help you locate and identify information.

Document Conventions

The following typographical conventions are used in this guide:

Type style	Used for
bold	Command names, switches, and any text you must type exactly as it appears. To carry out a command, type the command name and press the ENTER key.
italic	Parameters. You supply the text for any item shown in italic. For example, if you want to use a parameter that calls for a *filename*, you must type the name of the specific file.
	New terms appear in italic type. The term is explained when it first occurs. Italic type is also used for emphasis in certain examples.
ALL CAPITALS	Directory names, filenames, and acronyms. When you type directory names and filenames, you can use lower-case letters.

Microsoft documentation uses the term "MS-DOS" to refer to the MS-DOS and IBM Personal Computer DOS operating systems.

Keyboard Conventions

Key combinations and key sequences appear in the following format:

Notation	Meaning
KEY1+KEY2	A plus sign (+) between key names means you must press the keys at the same time. For example, "Press CTRL+C" means that you press CTRL and hold it down while you press C.
KEY1, KEY2	A comma (,) between key names means you must press the keys in sequence—for example, "Press ALT,F10" means that you press the ALT key and release it, and then press the F10 key and release it.

Installing MS-DOS Version 5.0

Before you can use MS-DOS version 5.0, you must run the Setup program, which is on Disk 1. During installation, Setup does the following:

- Evaluates your system to determine the type of equipment you have. You are prompted to verify information and make any necessary changes.

- Partitions and formats your hard disk, if necessary.

- Expands the compressed MS-DOS version 5.0 files and copies them to your hard disk or floppy disks.

When you complete the Setup program, you can start using MS-DOS version 5.0.

Before Installation

Before installing MS-DOS version 5.0, prepare to verify or provide information about the following:

- The current time and date.

- Which country's time and date formats you want to use.

- Which country's keyboard layout you have.

- Whether you are installing MS-DOS version 5.0 on a hard disk or floppy disks.

- The directory in which you want to store MS-DOS version 5.0 files.

  Setup places the files in a directory called DOS by default. Accept this choice unless it's more appropriate to give the directory a different name.

- Whether you want MS-DOS Shell (a graphical interface) to appear each time you start your system.

- Whether to create a single MS-DOS partition that occupies your entire hard disk.

  This option appears only if your hard disk doesn't contain a DOS partition and has free disk space. Setup creates one MS-DOS partition by default. Accept this choice unless you need to reserve some space for another operating system or you want to create more than one logical drive. For more information about partitions, see Chapter 6, "Managing Disks," in the *Microsoft MS-DOS User's Guide and Reference*.

Installing on a Hard Disk

Run the Setup program to install MS-DOS version 5.0 on your hard disk.

▶ **To install on a hard disk:**

1. Insert Disk 1 in drive A.

2. Start your computer.

3. Follow the instructions on your screen.

If you have questions about any of the procedures or options, you can request Help by pressing the F1 key.

After you install MS-DOS version 5.0, create a *system disk*. A system disk is a floppy disk you can use to start MS-DOS if your hard disk fails. For more information about making a system disk, see "Creating a System Disk" later in this chapter.

Installing on Floppy Disks

For this process, you need to supply and label a number of disks to create a set of working disks.

If you are installing from 5.25-inch disks, you need seven disks. Label them as follows:

- Startup
- Support

- Basic/Edit
- Utility

- Shell
- Help
- Supplemental

If you are installing from 3.5-inch disks, you need four disks. Label them as follows:

- Startup/Support
- Shell/Help
- Basic/Edit/Utility
- Supplemental

▶ **To install MS-DOS on floppy disks:**

1. Insert Disk 1 in drive A.

2. Start your computer.

3. Follow the instructions on your screen.

    As Setup installs MS-DOS, you switch between the installation disks supplied with MS-DOS and the floppy disks you supply.

The working disks that Setup creates run MS-DOS version 5.0. Use the Startup disk to start your system.

The PACKING.LST file lists the contents of each disk. This file is on Shell (5.25-inch disks) or Shell/Help (3.5-inch disks).

Creating a System Disk

After you install MS-DOS, create a system disk so you can start MS-DOS if your hard disk fails. A system disk is a floppy disk that contains only the files required to start your system with MS-DOS version 5.0.

▶ **To create a system disk:**

1. Insert a blank, formatted floppy disk in drive A.

2. Type **sys a:**

    MS-DOS copies system files to the floppy disk.

If your hard disk fails, you can start MS-DOS by inserting the system disk in drive A and restarting your computer.

You can also start MS-DOS version 5.0 by inserting Disk 1 in drive A and restarting your computer. When the Setup program appears on your screen, press F3 and type y to quit Setup. Generally, it's a good idea to use the system disk rather than Disk 1 to start MS-DOS.

Chapter 3
Troubleshooting MS-DOS

Chapter 3 provides solutions to some post-installation problems and answers to some common questions about MS-DOS.

Solving Problems After Installation

This section explains how to solve problems you might encounter after you have installed MS-DOS version 5.0 on your computer.

MS-DOS Doesn't Run in the High Memory Area

If your computer has extended memory, the Setup program should set up your system so that MS-DOS runs in the high memory area (HMA). The HMA is the first 64K of extended memory. Thus, more conventional memory is available to other programs.

You can confirm that MS-DOS is running in the HMA by using the **mem** command. If MS-DOS is in the HMA, **mem** displays the following message:

```
MS-DOS resident in High Memory Area
```

If your computer has extended memory but MS-DOS is not running in the HMA, the problem is either that your CONFIG.SYS file does not contain the correct commands, or that HIMEM is not correctly installed. (HIMEM is the MS-DOS extended-memory manager. Either HIMEM or another extended-memory manager is required in order for MS-DOS to use the HMA.) To run MS-DOS in the HMA:

- The CONFIG.SYS file must contain a **dos=high** command.

- The CONFIG.SYS file must contain a **device** command for HIMEM (or another extended-memory manager), as in the following example:

```
device=c:\dos\himem.sys
```

- The **device** command for HIMEM must appear before the **device** commands for other memory managers.

- The HIMEM.SYS file must be in the location specified by the **device** command in your CONFIG.SYS file.

- HIMEM must be properly installed on your computer.

  Typically, the Setup program installs HIMEM and makes any necessary adjustments. However, there are a few hardware components that Setup cannot detect. See the README.TXT file for information about installing HIMEM with special hardware components. The README.TXT file is in the directory containing your MS-DOS files, or on Disk 5 (5.25-inch disks), or Disk 3 (3.5-inch disks).

If your CONFIG.SYS file contains the correct commands, HIMEM is properly installed, and MS-DOS still does not run in the HMA, the memory configuration of your computer might not permit use of the HMA.

A Program Reports the Wrong Version of MS-DOS

Some programs run only with specific versions of MS-DOS. If a program displays a message indicating the program does not run with MS-DOS version 5.0, contact your vendor to get an updated program or to find out whether the current version of the program is actually compatible with MS-DOS version 5.0.

If the current version of the program is compatible with MS-DOS version 5.0, use the **setver** command to change the version number that MS-DOS reports to the program. When you use **setver**, the program interprets MS-DOS version 5.0 as the version it is designed to use. For example, if a program named MYAPP.EXE runs only with MS-DOS version 3.3 or earlier, you would type:

```
setver myapp.exe 3.3
```

MS-DOS reports the changed version number when you restart your computer. If the program is compatible with MS-DOS version 5.0, the **setver** command eliminates the apparent incompatibility.

There must be a **device** command for the SETVER.EXE device driver in your CONFIG.SYS file in order for the **setver** command to report a different version to a program. Also, make sure there is only one SETVER.EXE on your hard disk, because each SETVER.EXE contains a separate version table.

For more information about the **setver** command, see Chapter 14, "Commands," in the *Microsoft MS-DOS User's Guide and Reference*.

CAUTION Contact your software vendor for information about whether a specific program works with MS-DOS version 5.0. It is possible that Microsoft has not verified whether the program will successfully run if you use the **setver** command to change the program version number and version table. If you run the program after changing the version table in MS-DOS version 5.0, you may lose or corrupt data or introduce system instabilities. If you do not contact your software vendor to determine the compatibility of a specific program with MS-DOS version 5.0, Microsoft is not responsible for any loss or damage.

You Receive the "Packed File Corrupt" Message

MS-DOS displays the message "Packed file corrupt" when a program cannot be successfully loaded into the first 64K of conventional memory. This error is most likely to occur when you load device drivers into the upper memory area, thereby freeing more conventional memory.

MS-DOS version 5.0 provides the **loadfix** command, which ensures that a program is loaded above the first 64K of conventional memory. To use the **loadfix** command, include it at the beginning of the command that starts the program. The syntax of this command is:

loadfix [*drive*:][*path*]*filename* [*program-parameters*]

For example, to ensure that a program file named MYAPP.EXE (in the APPS directory of drive C) is loaded above 64K, you would type:

```
loadfix c:\apps\myapp.exe
```

A Program Does Not Use XMS Extended Memory

Most programs that use extended memory conform to the Lotus/Intel-/Microsoft/AST eXtended Memory Specification (XMS). To use such programs with MS-DOS, you need an extended-memory manager, such as HIMEM. (For more information about HIMEM and extended memory, see Chapter 12, "Optimizing Your System," in the *Microsoft MS-DOS User's Guide and Reference*.)

However, some programs do not conform to the XMS. Such programs cannot use extended memory if this memory is managed according to the XMS.

If you are using HIMEM, you can allocate a portion of your extended memory to programs that use extended memory but do not conform to the XMS. You do this by including the **/int15** switch with the **device** command for HIMEM.SYS. The value you specify for the **/int15** switch should be the memory you want set aside, plus 64. For example, to reserve 512K of non-XMS extended memory, you would include the following command in your CONFIG.SYS file:

```
device=c:\dos\himem.sys /int15=576
```

NOTE Some of the programs that don't conform to the XMS cannot run when MS-DOS is loaded in the high memory area. If you encounter problems with such a program, load MS-DOS into conventional memory.

You Accidentally Delete an MS-DOS File

If you inadvertently delete an MS-DOS file that you need, there are three ways to get the file back:

- Restore the file by using the **undelete** command.

    The **undelete** command can restore a deleted file. However, it is effective only if you haven't changed any of the information on your disk since deleting that file. If you move or change any files or directories, you may not be able to restore the deleted file.

- Copy the file from your working disks.

    If you created a set of working disks that contain MS-DOS version 5.0, you can copy the file from those disks. First, open the PACKING.LST file. This file lists the contents of each working disk. PACKING.LST is in the directory that contains your MS-DOS files, or Shell (5.25-inch disks), or Shell/Help (3.5-inch disks). Find out which working disk contains the file you want. Then, use the **copy** command to copy the file to your hard disk.

- Copy and expand the file from your installation disks.

    You can also retrieve deleted files from your installation disks. Most of the files on these disks are in compressed form. An underscore (_) at the end of the filename extension indicates that a file is compressed (SORT.EX_, for example). To retrieve a compressed file, use the **expand** command rather than the **copy** command. The following procedure explains how to retrieve a compressed file from an installation disk.

▶ **To expand and copy a file from an installation disk:**

1. Open the PACKING.LST file.

   This file is in the directory that contains your MS-DOS files, or on Disk 3 (5.25-inch disks), or Disk 2 (3.5-inch disks).

2. Determine which installation disk contains the file you want to recover.

3. Insert the appropriate installation disk in drive A.

4. Use the **expand** command to expand and copy the compressed file from the installation disk to your MS-DOS directory.

   For example, to expand and copy the DOSKEY.CO_ file to the DOS directory on drive C, you would type:

   ```
   expand a:doskey.co_ c:\dos\doskey.com
   ```

NOTE   If you accidentally delete the EXPAND.EXE file, you can recover it from the installation disk by using the **copy** command.

For more information about the **undelete**, **copy**, and **expand** commands, see Chapter 14, "Commands," in the *Microsoft MS-DOS User's Guide and Reference*.

The Undelete Command Doesn't Work

If you can't recover a deleted file, it is probably too late to save the file by using the **undelete** command.

In general, the **undelete** command works best under the following circumstances:

- If you use **undelete** immediately after you delete a file

- If you deleted only one file

- If you use Mirror, a memory-resident program that keeps track of certain changes you make to your hard or floppy disk

CAUTION   Never run a disk-compaction program (defragmentation utility) after deleting files you want to restore. The **undelete** command cannot restore files that were deleted before you ran the disk-compaction program.

You Change Your Monitor

If you change the type of monitor you use, you need to manually install files so that the monitor can work correctly with MS-DOS Shell. For example, if you were using an EGA monitor and change to a VGA monitor, you do not gain the benefits of the VGA monitor when running MS-DOS Shell until you manually install the VGA files.

MS-DOS Shell works with seven monitors. The files for each are on your installation disks. To install these files, expand and replace your current MS-DOS Shell monitor files. Expanding the files is necessary because files on the installation disks are compressed. You expand the files by using the **expand** command, which simultaneously expands and copies files.

The following list shows the compressed files needed for each of the supported monitors:

Monitor	Required files
MONO	(No .VI_ file necessary), MONO.IN_, MONO.GR_
CGA	CGA.VI_, CGA.IN_, CGA.GR_
EGA	EGA.VI_, EGA.IN_, EGA.GR_
EGA MONO	EGA.VI_, MONO.IN_, EGAMONO.GR_
VGA, Super VGA, XGA, 8514, and other high-resolution monitors	VGA.VI_, EGA.IN_, VGA.GR_
MONO (VGA, Super VGA, XGA, 8514, and other high-resolution monitors)	VGA.VI_, MONO.IN_, VGAMONO.GR_
Hercules	HERC.VI_, MONO.IN_, HERC.GR_

To install the MS-DOS version 5.0 files for a different monitor, locate the files you need, copy the correct .VI_ and .GR_ files, and then either create a DOSSHELL.INI file or modify your previous one.

▶ **To find and copy the .VI_ and .GR_ files you need:**

1. Using the preceding list, determine which files you need to install.

2. Open the PACKING.LST file.

   This file lists the contents of each installation disk. This file is in the directory that contains your MS-DOS files, or Disk 3 (5.25-inch disks), or Disk 2 (3.5-inch disks).

3. Find the names of the files you need for your monitor, and write down the location of each file.

4. Use the **expand** command to expand and copy the appropriate .VI_ and .GR_ files from the installation disks to the directory that contains your MS-DOS files. Make sure you name the destination files with .VID and .GRB extensions, respectively.

For example, you would type the following to use the VGA.VI_ file:

```
expand vga.vi_ c:\dos\dosshell.vid
```

At this point, determine whether to replace your current DOSSHELL.INI file. If you choose to replace this file, you can immediately use any additional colors your new monitor provides. However, you lose any modifications you previously made to MS-DOS Shell, such as program groups and program items. If you don't want to lose these modifications, you must manually add the new color files to your existing DOSSHELL.INI file.

▶ **To create a DOSSHELL.INI file with updated colors:**

■ Use the **expand** command to replace your current DOSSHELL.INI file with the .IN_ file you need. Make sure you name the destination file DOSSHELL.INI.

For example, you would type the following to use the VGA.IN_ file:

```
expand vga.in_ c:\dos\dosshell.ini
```

▶ **To add updated colors to your current DOSSHELL.INI file:**

1. Use the **expand** command to expand and copy the .IN_ file to your hard disk.

For example, you would type the following to use the VGA.IN_ file:

```
expand vga.in_ c:\dos\vga.ini
```

2. Compare your DOSSHELL.INI file with the .INI file you created.

You might find it easier to compare these files if you print them.

3. In the DOSSHELL.INI file, find the section that begins with the command **color =**.

This section contains available color schemes for your monitor. Each color scheme begins with the command **selection =**.

4. Copy any new color schemes from the expanded .INI file to the **color** = section of your current DOSSHELL.INI file.

5. Copy the values of three other commands from the new .INI file to your current DOSSHELL.INI file.

These commands are located near the beginning of the files. Two of them, **screenmode** = and **resolution** =, are in the **[savestate]** section of the file. The other command, **currentcolor** =, is in the **[programstarter]** section.

The next time you start MS-DOS Shell and use your new monitor, MS-DOS Shell should have the correct default resolution.

The Restore Command Doesn't Work

There are several reasons the **restore** command might not be able to restore files that were backed up by using the **backup** command:

- You are trying to restore files to a different directory.

  The **restore** command restores files only to the directory from which those files were backed up. For example, you cannot restore files backed up from C:\WORD to a directory named C:\OLDWORD. (However, you can change the drive letter. For example, you could restore files backed up from C:\WORD to the directory D:\WORD.)

- You are trying to restore a file to a different filename.

  The **restore** command does not change the name of a file. For example, if you back up a file named REPORT.TXT, you cannot restore it to a file named MYREPORT.TXT.

- The **restore** command is not compatible with the **backup** command you used to back up the files.

  The **restore** command supplied with MS-DOS version 5.0 can restore files that you backed up by using the **backup** command from MS-DOS version 2.0 or later.

  If you backed up a file by using the **backup** command from MS-DOS version 5.0, you must use the **restore** command from MS-DOS version 3.3 or later to restore it.

  Backup is designed to back up files or directories for safekeeping. **Restore** is designed to restore those files and directories on the same computer and with the same version of MS-DOS.

For more information about the **backup** and **restore** commands, see Chapter 14, "Commands," in the *Microsoft MS-DOS User's Guide and Reference*.

You Can't Format a Floppy Disk

When you try to format a floppy disk, you might receive the following error message:

```
Drive A error. Insufficient space for the MIRROR image file.
There was an error creating the format recovery file
This disk cannot be unformatted
Proceed with Format (Y/N)?
```

Typically, with MS-DOS version 5.0, the **format** command leaves the files on the disk intact, and adds a hidden file. This file contains information that MS-DOS can use to recover the files on a newly formatted disk. (You recover the files on a newly formatted disk by using the **unformat** command.) If you try to format a disk that is quite full, there might not be enough space for the format recovery file.

If there is not enough room for the format recovery file, MS-DOS asks whether you want an irreversible format. Type **n** to delete some files from the disk, and try again. Type **y** to choose the irreversible format. MS-DOS formats that disk but is unable to carry out the **unformat** command at a later time.

MS-DOS Editor Won't Run

If MS-DOS displays the message "Can not find file QBASIC.EXE" when you try to run MS-DOS Editor, make sure the QBASIC.EXE file is in your MS-DOS directory. This file is required to run MS-DOS Editor. If QBASIC.EXE is not on your disk, you must copy it from the installation disks by using the **expand** command. (For more information about expanding and copying a file from your installation disks, see "You Accidentally Delete an MS-DOS File " earlier in this chapter.)

You Cannot Print from the Screen

If pressing the PRINT SCREEN key does not print an image of your screen, make sure you are running the Graphics program. This memory-resident program is necessary only for printing screens that contain graphics.

To determine whether you are running Graphics, use the **mem /c** command to display the names of the programs in memory. Check the Name column of the display for GRAPHICS. If it is present, the Graphics program is running.

For more information about the Graphics program, see the **graphics** command in Chapter 14, "Commands," in the *Microsoft MS-DOS User's Guide and Reference*.

NOTE   The PRINT SCREEN key is disabled by some network software.

Common Questions About MS-DOS

This section answers some common questions about MS-DOS.

Can I Install MS-DOS Version 5.0 on Floppy Disks?

You can install MS-DOS version 5.0 on floppy disks by creating a set of working disks. For more information about creating these disks, see Chapter 2, "Installing MS-DOS Version 5.0."

Which Microsoft Device Drivers Should I Use?

MS-DOS includes several device drivers that you load by using the **device** command in your CONFIG.SYS file. Other Microsoft products also include some of these device drivers.

For example, the following device drivers are supplied with both MS-DOS version 5.0 and Microsoft Windows™ version 3.0:

- HIMEM
- RAMDrive
- SMARTDrive
- EMM386

These are general-purpose device drivers. Although there are no special versions for a particular product, these device drivers are updated periodically. Use the most recent version available. For example, the device drivers included with MS-DOS version 5.0 are more recent than those supplied with Windows version 3.0.

If these device drivers are in your CONFIG.SYS file before you install MS-DOS version 5.0, the Setup program modifies the file so that you are using the versions supplied with MS-DOS version 5.0.

For more information about these and other device drivers, see Chapter 15, "Device Drivers," in the *Microsoft MS-DOS User's Guide and Reference*.

What Is the Maximum Length of the PATH Variable?

The PATH variable, like other environment variables, is limited to 127 characters.

You use the **path** command to set your PATH variable to one or more directories. Whenever you type a command, MS-DOS searches the directories in your path for the command or program you are trying to run. The following is an example of the **path** command:

```
path=c:\;c:\dos;c:\windows;d:\batfiles;d:\util
```

The name of the variable (*path*) and the equal sign take up 5 of the 127 characters. This means you can use 122 characters to specify directory names. To use those 122 characters most efficiently:

- Remove any spaces from the **path** command

- Remove seldom-used directories from the **path** command

- Use short directory names

- Use batch programs to set and reset the path according to your current needs

- Use the **subst** command to substitute a drive letter for a long directory path, if necessary

  You can then use that drive letter instead of the full path in the **path** command. You can use the **subst** command in your AUTOEXEC.BAT file. If you do, it must precede the **path** command.

  For example, to shorten a path named C:\USER\BETTY\FORMS to Q:, you would include the following command (before the **path** command) in your AUTOEXEC.BAT file:

  ```
  subst q: c:\user\betty\forms
  ```

For more information about the **path** and **subst** commands, see Chapter 14, "Commands," in the *Microsoft MS-DOS User's Guide and Reference*.

How Can I Increase the Environment Size of My System?

You can allocate more environment space by specifying the /e switch with the **shell** command. The default environment size is 256 bytes.

For example, if you added the following command to your CONFIG.SYS file, you would allocate 1024 bytes of environment space:

```
shell=c:\command.com /p /e:1024
```

If you are using more than one environment and you do not specify the /e switch for each, the size of the environments may vary.

How Do I Run Device Drivers and Programs in the Upper Memory Area?

If you have a system with an 80386 or higher processor and extended memory, you can make more conventional memory available by running certain device drivers and programs in the upper memory area. For information about using the upper memory area, see Chapter 12, "Optimizing Your System," in the *Microsoft MS-DOS User's Guide and Reference*.